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c1
contd

- i) a self-assembled monolayer; and
- ii) a capture probe;

b) a target sequence comprising a first portion that is capable of hybridizing to said capture probe, and a second portion that does not hybridize to said capture probe and comprises at least one covalently attached electron transfer moiety (ETM).

24. New A composition comprising:

- a) an electrode comprising:
 - i) a self-assembled monolayer; and
 - ii) a capture probe;
- b) a label probe comprising a first portion that is capable of hybridizing to a component of an assay complex, and a second portion comprising a recruitment linker that does not hybridize to a component of assay complex and comprises at least one covalently attached electron transfer moiety (ETM).

25 New A method of detecting a target nucleic acid sequence in a test sample comprising:

- a) forming a hybridization complex including said target sequence and a capture probe; wherein said capture probe is on an electrode comprising a self-assembled monolayer;
- b) directly or indirectly attaching at least one label probe to said target sequence to form an assay complex, wherein said label probe comprises a first portion capable of hybridizing to a component of said assay complex, and a second portion comprising a recruitment linker that does not hybridize to a component of said assay complex and comprises at least one covalently attached electron transfer moiety (ETM); and

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c) detecting the presence of said ETM using said electrode.

Please enter the following amended claims:

C2

3. (Amended) A composition according to claims 1, 2, 23, or 24 wherein said ETM is ferrocene.
4. (Amended) A composition according to claim 1, 2, 23, or 24 wherein said label probe comprises a plurality of ETMs.
5. (Amended) A composition according to claim 1, 2, 23, or 24 wherein said first portion of said label probe further comprises a covalently attached ETM.
6. (Amended) A composition according to claim 1, 2, 23, or 24 wherein said assay complex comprises an amplifier probe.
7. (Amended) A composition according to claim 1, 2, 23, or 24 wherein said assay complex comprises a capture extender probe.
8. (Amended) A composition according to claim 1, 2, 23, or 24 wherein said monolayer further comprises insulators.
9. (Amended) A composition according to claim 1, 2, 23, or 24 wherein said capture probe is attached to said electrode via a conductive oligomer.

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C2M
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10. (Amended) A composition according to claim 1, 2, 23, or 24 wherein said capture probe is attached to said electrode via an insulator.

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12. (Amended) A method according to claim 11 or 25 wherein said label probe comprises a plurality of ETMs.

13. (Amended) A method according to claim 11 or 25 wherein said target sequence is attached to said electrode by hybridization to a capture probe.

14. (Amended) A method according to claim 11 or 25 wherein said target sequence is attached to said electrode by hybridizing a first portion of said target sequence to a first capture extender probe, and hybridizing a second portion of said first capture extender probe to a capture probe on the electrode.

15. (Amended) A method according to claim 11 or 25 wherein said target sequence is attached to said electrode by

- a) hybridizing a first portion of said target sequence to a first portion of a first capture extender probe;
- b) hybridizing a second portion of said first capture extender probe to a first portion of a capture probe on the electrode;
- c) hybridizing a second portion of said target sequence to a first portion of a second capture extender probe; and
- d) hybridizing a second portion of said second capture extender probe to a second portion of said capture probe.

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16. (Amended) A method according to claim 11 or 25 wherein said label probe is attached to said target sequence by hybridizing said first portion of said label probe to a first portion of said target sequence.

17. (Amended) A method according to claim 11 or 25 wherein said label probe is attached to said target sequence by

- a) hybridizing a first portion of an amplifier probe to a first portion of said target sequence; and
- b) hybridizing at least one amplification sequence of said amplifier probe to said first portion of at least one label probe.

18. (Amended) A method according to claim 11 or 25 wherein said label probe is attached to said target sequence by

- a) hybridizing a first portion of a first label extender probe to a first portion of a target sequence;
- b) hybridizing a second portion of said first label extender probe to a first portion of an amplifier probe;
- c) hybridizing at least one amplification sequence of said amplifier probe to said first portion of at least one label probe.

19. (Amended) A method according to claim 11 or 25 wherein said label probe is attached to said target sequence by